

I claim:

1. A stent for inserting into a human blood vessel and conforming to an inner lining of the blood vessel, the stent comprising:

an outer mesh layer defining a generally cylindrical shape with opposed first and second open ends, the shape of the outer mesh layer defining an outer end-to-end length;

an inner mesh layer defining a generally cylindrical shape with opposed first and second open ends, the inner shape defining an inner end-to-end length; wherein the inner mesh layer is fitted within the outer mesh layer and the layers have substantially equal end-to-end lengths; and

a film layer defining a generally cylindrical shape with opposed first and second ends, the film shape defining an end-to-end length, the film layer fitted between the inner and outer mesh layers and configured to substantially prevent growth of the inner lining of the blood vessel through the mesh layers.

2. The stent of claim 1 wherein the ends of the film layer extend beyond the ends of the mesh layers.

3. The stent of claim 1 wherein the film layer includes PTFE.

4. The stent of claim 2 wherein the film layer substantially comprises PTFE.

5. The stent of claim 1 wherein the end-to-end length of the film layer is greater than the lengths of the inner and outer mesh layers.

6. The stent of claim 1 wherein one of the ends of the film layer extends beyond one of the ends of the mesh layers at least about 0.5 mm.

7. The stent of claim 6 wherein both of the ends of the film layer extend beyond the ends of the mesh layers at least about 0.5 mm.

8. A stent configured for insertion in a human blood vessel, the stent comprising:

a body with an inner layer providing a first flexible covering;

an outer layer providing a second flexible covering; and

a middle wire mesh layer between the inner and outer layers, the wire mesh layer providing a compressible, self-expanding structure.

9. The stent of claim 8 wherein the inner and outer layers of the stent include PTFE.

10. The stent of claim 8 wherein the wire mesh layer includes nitinol.

11. The stent of claim 8 wherein the middle layer defines first and second ends and the middle layer includes a radiopaque portion adjacent at least one of the ends.

12. The stent of claim 8 wherein the inner and outer layers each define first and second ends, and further wherein the inner and outer layers are sized and aligned with their ends extending beyond the ends of the middle layer.

13. The stent of claim 8 wherein the inner and outer layers each define an end-to-end length and the inner and outer layers are sized to be substantially equal in length.

14. The stent of claim 13 wherein the middle layer defines an end-to-end length that is less than the end-to-end lengths of the inner and outer layers.

15. The stent of claim 8 wherein the inner and outer layers are sealed together adjacent the first and second ends, encasing and fixing in place the middle layer.

16. The stent of claim 8 wherein at least one of the inner and outer layers are provided with a radiopaque portion adjacent at least one of the first and second ends.

17. The stent of claim 16 wherein the middle layer includes a radiopaque portion adjacent at least one of the ends, the combination of the radiopaque portion of the middle layer and the radiopaque portion of the inner or outer layer providing an X-ray indication of whether the middle layer has expanded beyond the ends of the inner and outer layers.

18. A stent delivery system for use in a human blood vessel, the system comprising:

a stent having a mesh layer, the mesh layer defining a middle portion between open, opposed proximal and distal ends and a central lumen communicating between the open ends, and further wherein the mesh layer includes a wire structure; and

a balloon catheter for mounting the stent and inserting and installing the stent inside the human blood vessel, wherein the wire structure of the mesh layer adjacent the distal end is constructed to be more compliant and to expand more rapidly in response to expansion of the balloon catheter as compared to the middle portion of the mesh layer.